DELTA R

DELTA R FULL COLOR

DELTA R TRILED

DELTA 5-7 RGB R

GB

User's Manual Rel 1.5

D.T.S. Illuminazione srl - ITALY
http://www.dts-lighting.it

DTS
The Lighting Company

Made in Italy

INDEX:

1- TECHNICAL FEATURES

Delta R Full Color

40 RGB Full Color LEDs/ LED power 3W
2.800 Lumens / 370 Lux at 5 m (medium flood lenses)
RGB color generation / 16 million colours
Colour temperature variable on a linear range (3.200°K÷5.500°K)
No infrared emission / no ultraviolet emission
LEDs average lifespan: 100.000 hours
Optical units can be interchanged by users (spot / medium /wide)
Interface: OLED display + 4 buttons / infrared remote control
Control signals: USITT DMX 512 USITT serial digital signals
15 DMX channels
Independent operation (Master / Slave)
Programmable automated playback (7 days)
Movement on 3 axes : Pan 320° /Tilt1 160°(Motorized) / Tilt2 135°(Manual).
Safety-locking system
IP65 protection level
Professional HARTING / ILME sockets (IP65 protection rating)
Full range AC 90-260V, 50-60Hz power supply
Operating ambient temperature -10° / 40°
Weight: 24 Kg

ACCESSORIES
Lenses set spot (cod. 03.LK.008)
Lenses set medium flood (cod. 03.LK.001)
Lenses set wide flood (cod. 03.LK.002)
Flight case for 1 DELTA (cod. 0521C029)
Flight case for 2 DELTA (cod. 0521C030)
Safety wire (3mm x 60 cm), Ring spring catch (max. capacity load 60Kg) (Cod. 0521A010)
"C" Clamp GQUICK with "Fast Lock" connection ¼ turn (max. load 80Kg) (cod. 0521A014)

Dimensions (LxDxH)
projector 430 x 285 x 570 mm

Weight 24 Kg (motorized version)

Packaging Dimensions (LxDxH)
530 x 500 x 660 mm

Weight 30 Kg (motorized version)

Delta R Triled

20 LEDs / TRILED technology / LED power 1W x 3
2.400 Lumens / 450 Lux at 5 m (medium flood lenses)
RGB color generation / 16 million colours
Colour temperature variable on a linear range (3.200°K÷5.500°K)
No infrared emission / no ultraviolet emission
LEDs average lifespan: 100.000 hours
Optical units can be interchanged by users (spot / medium flood / wide flood)
Interface: OLED display + 4 buttons / infrared remote control
Control signals: USITT DMX 512 USITT serial digital signals
15 DMX channels
Independent operation (Master / Slave)
Programmable automated playback (7 days)
Movement on 3 axes : Pan 320° /Tilt1 160°(Motorized) / Tilt2 135°(Manual)
Safety-locking system
IP65 protection level
Professional HARTING / ILME sockets (IP65 protection rating)
Full range AC 90-260V, 50-60Hz power supply
Operating ambient temperature -10° / 40°
Weight: 24 Kg

ACCESSORIES

Lenses set spot (cod. 03.LK.004)
Lenses set medium flood (cod. 03.LK.005)
Lenses set wide flood (cod. 03.LK.006)

Flight case for 1 DELTA (cod. 0521C029)
Flight case for 2 DELTA (cod. 0521C030)
Safety wire (3mm x 60 cm), Ring spring catch (max. capacity load 60Kg) (Cod. 0521A010)
"C" Clamp GQUICK with "Fast Lock" connection ¼ turn (max. load 80Kg) (cod. 0521A014)

Dimensions (LxDxH)
projector 430 x 285 x 570 mm

Weight 24 Kg (motorized version)
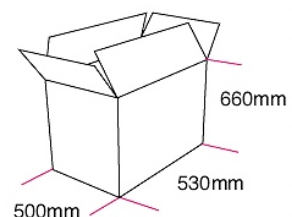
Packaging Dimensions (LxDxH)
530 x 500 x 660 mm

Weight 30 Kg (motorized version)

1- TECHNICAL FEATURES

Delta 5 RGB R

108 X 1W Luxeon type LEDS (36 Red, 36 Green, 36 Blue)
2.400 Lumens / 900 Lux at 5 m (medium flood lenses)
RGB color generation / 16 million colours
Colour temperature variable on a linear range (3.200°K÷5.500°K)
No infrared emission / no ultraviolet emission
LEDs average lifespan: 100.000 hours
Optical units can be interchanged by users (spot / medium /wide)
Interface: OLED display + 4 buttons / infrared remote control
Control signals: USITT DMX 512 USITT serial digital signals
15 DMX channels
Independent operation (Master / Slave)
Programmable automated playback (7 days)
Movement on 3 axes : Pan 320° /Tilt1 160°(Motorized) / Tilt2 135°(Manual).
Safety-locking system
IP65 protection level
Professional HARTING / ILME sockets (IP65 protection rating)
Full range AC 90-260V, 50-60Hz power supply
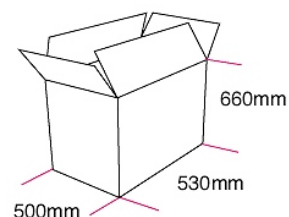Operating ambient temperature -10° / 40°
Weight: 24 Kg

ACCESSORIES
Lenses set spot (cod. 03.LK.008)
Lenses set medium flood (cod. 03.LK.001)
Lenses set wide flood (cod. 03.LK.002)
Flight case for 1 DELTA (cod. 0521C029)
Flight case for 2 DELTA (cod. 0521C030)
Safety wire (3mm x 60 cm), Ring spring catch (max. capacity load 60Kg) (Cod. 0521A010)
"C" Clamp GQUICK with "Fast Lock" connection ¼ turn (max. load 80Kg) (cod. 0521A014)

Dimensions (LxDxH)
projector 430 x 285 x 570 mm

Weight 24 Kg (motorized version)

Packaging Dimensions (LxDxH)
530 x 500 x 660 mm

Weight 30 Kg (motorized version)

1- TECHNICAL FEATURES

Delta 7 RGB R

108 X 1W P4 type LEDS (36 Red, 36 Green, 36 Blue)
2.400 Lumens / 1150 Lux at 5 m (medium flood lenses)
RGB color generation / 16 million colours
Colour temperature variable on a linear range (3.200°K÷5.500°K)
No infrared emission / no ultraviolet emission
LEDs average lifespan: 100.000 hours
Optical units can be interchanged by users (spot / medium /wide)
Interface: OLED display + 4 buttons / infrared remote control
Control signals: USITT DMX 512 USITT serial digital signals
15 DMX channels
Independent operation (Master / Slave)
Programmable automated playback (7 days)
Movement on 3 axes : Pan 320° /Tilt1 160°(Motorized) / Tilt2 135°(Manual).
Safety-locking system
IP65 protection level
Professional HARTING / ILME sockets (IP65 protection rating)
Full range AC 90-260V, 50-60Hz power supply
Operating ambient temperature -10° / 40°
Weight: 24 Kg

ACCESSORIES
Lenses set spot (cod. 03.LK.008)
Lenses set medium flood (cod. 03.LK.001)
Lenses set wide flood (cod. 03.LK.002)
Flight case for 1 DELTA (cod. 0521C029)
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Dimensions (LxDxH)
projector 430 x 285 x 570 mm

Weight 24 Kg (motorized version)

Packaging Dimensions (LxDxH)
530 x 500 x 660 mm

Weight 30 Kg (motorized version)

2- IMPORTANT SAFETY INFORMATION

2.1 Fire prevention:

-Never locate the fixture on any flammable surface.
-Minimum distance from flammable materials: 1 m.
-Minimum distance from the closest illuminable surface: 1 m.
-Replace any blown or damaged fuses only with those of identical value. Refer to the wiring diagram if there is any doubt.
-Connect the projector to mains power via a thermal magnetic circuit breaker.

2.2 Prevention of electric shock:

-High voltage is present inside the unit. Isolate the projector from the mains supply prior to performing any function which involves touching the inside of the unit.
-The level of technology inherent in the DELTA R requires the assistance of specialised personnel for all servicing.Please refer to an authorised DTS service centre.
-A good earth connection is essential for proper functioning of the projector.
Never connect the unit without proper earth connection.
-The fixture should be located in places with a good air ventilation.

2.3 Protection against direct light radiation:

-Never turn the unit on if any of the lenses or the glass lenses protection is damaged.
-Never look directly the leds when they are on.

2.4 Safety:

-The projector should always be installed with bolts, clamps and other tools that are capable of supporting the weight of the unit.
-Always use a second safety chain to sustain the weight of the unit in case of the failure of the main fixing point.
-The external surface of the unit, at various points, may exceed 80°C. Never handle the unit until it's on.
-Never install the fixture in an enclosed area lacking sufficient air flow.
-The ambient temperature should not exceed 40°C.

2.5 Level of protection against the penetration of solid and liquid matter:

-The projector is classified as an ordinary appliance and its protection level against the penetration of solid and liquid matter is IP 65.

.
3- VOLTAGE AND FREQUENCY:

Delta R can operate at 90-270V, 50 or 60 Hz.

4- INSTALLATION:

Delta R may be either floor or ceiling mounted.
For floor mounting installations, the unit is supplied with four rubber mounting feet on the base.
For ceiling mounted installations, we reccommend the use of appropriate clamps to fix the unit to the mounting surface.
The supporting structure from which the unit is hung should be capable of bearing the weight of the unit, as should any clamps used to hung it. The structure should also be sufficiently rigid so as not to move or shake whilst the Delta R is moving.
The Delta R is fitted with 4 fixing points on the bottom used to attach accessories (clamps, hooks, etc.)
With a fast lock closure/release system (1/4 turn) to fix the fixture in any position.
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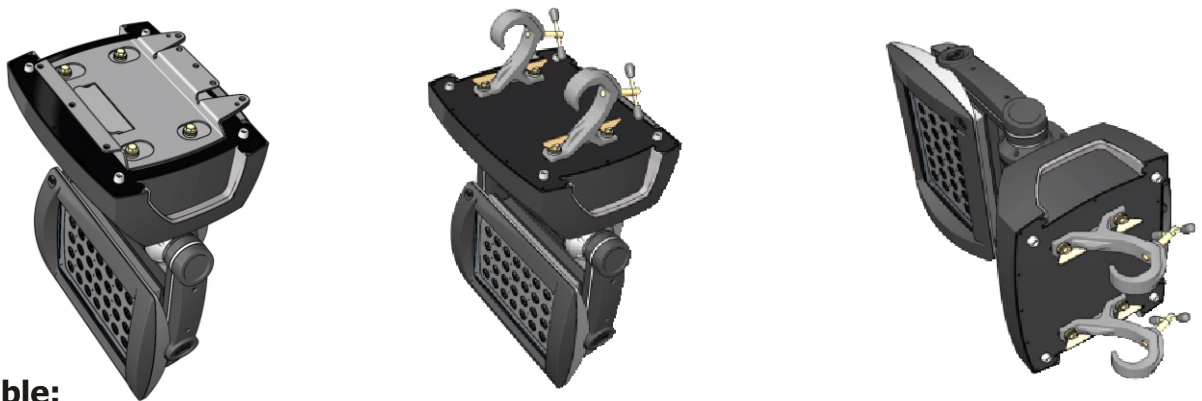
4.1 Safety cable:

We recommend the use of a safety cable or chain connected to the Delta R and to the suspension truss in order to avoid the fixture accidentally falling should the main fixing point fail. Make sure that the iron cable or chain can bear the weight of the entire unit.
You may attach the safety chain to the holes located on the base of the fixture, as shown in the picture below.

SAFETY CABLE
FIXING POINT
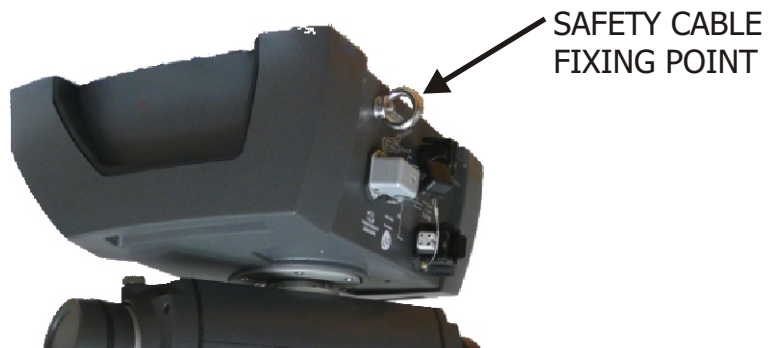
4.2 Risk of fire:

Each fixture produces heat and must be installed in a well-ventilated position. The minimum recommended distance from flammable material is 1m. Minimum distance from the object being illuminated is 1 m.

4.3 Ambient temperature:

The projector should never be installed in places that lack a constant air flow. The ambient temperature should NOT exceed 40°C.

5- MAINS CONNECTION:

Delta R can operate at 90-270V, 50 or 60Hz.
For connection purposes, ensure that your plug can handle at least 300W power consuption.

Strict adherence to regulatory norms is strongly
Recommended.

FUSE: T 3,15A

MAINS
Electronic ballast
90-260V 50 / 60Hz

4 1 **L**
3 2 **N**
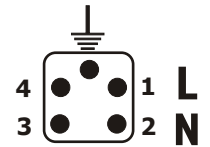
5.1 Protection:

The use of a thermal magnetic circuit breaker is recommended for each Delta R.
A good earth connection is essential for the correct operation of the projector.

6- DMX SIGNAL CONNECTION:

The unit operates using a digital DMX 512 (1990) signal. Connection between the control box and the projector or between projectors must be carried out using a two pair screened ø0.5 mm cable and a CANNON XLR 5 or 3 pole connector.
Ensure that the conductors do not touch each other.Do not connect the cable ground to the XLR chassy The plug housing must be isolated. Connect the mixer signal to the DMX IN projector plug and connect it to the next projector by connecting the DMX OUT plug on the first projector to the DMX IN plug of the second one.
In this way, all the projectors are cascade connected.

**CONTROLLER
S T A N D A R D
D M X   5 1 2**

5 1
4 2
3

1=GND
2=DATA-
3=DATA+

DMX IN

GND 1
DATA- 2 3 DATA+

DMX OUT

OUT

IN   OUT   IN   OUT   IN   OUT
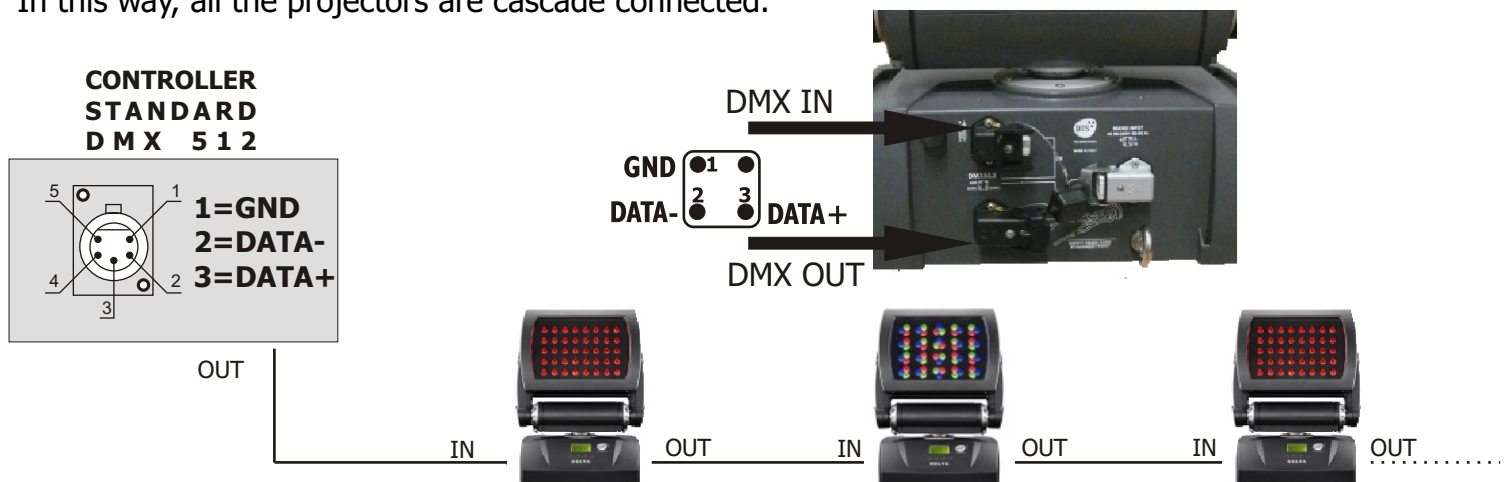
P.S:
 If the display showing the DMX address flashes, then one of the following errors has occurred:
- DMX signal not present
- DMX reception problem

6.1 DMX Addresses:

DELTA R have 15 DMX control channels.
Here below are described the DMX channels addressing for the controller:

Projector 1   A001
Projector 2   A016 If you want to select the next projector, just add "15"
Projector 3   A031
.....   A....
projector 6   A091

6.2 Selelcting the DMX address:

1) Press the UP-DOWN key until you reach the required DMX address. The numbers on the display will start to flash (but the new DMX address hasn't yet been set).
2) Press ENTER to confirm your selection. The numbers on the display will stop flashing and the projector is now controlled by the new DMX address.

TIPS: if you keep pushed the UP or DOWN keys, the channels are calculated more quickly and you get a faster selection.

MENU ENTER UP DOWN
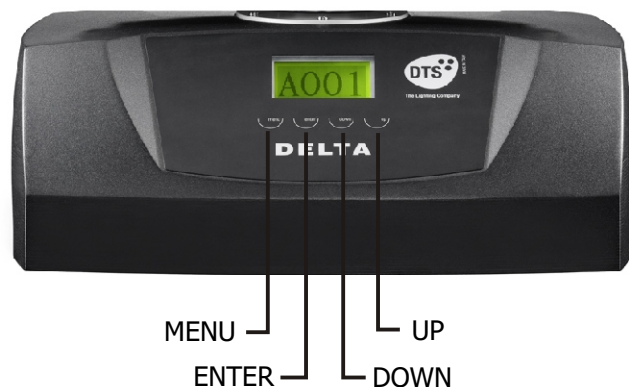
7- Movement
The projector has a maximum movement of 320° for Pan,180° for Tilt 1 and 135° for tilt 2
(7 mechanical steps 22,5° each).
 DO NOT place any obstructions in the path of the projector's movement.

Tilt 2 mechanical regulation

PAN 320°

TILT1 180°
Motorized

TILT2 135°
Mechanical

8- DISPLAY FUNCTIONS

DISPLAY FUNCTIONS

The DELTA R display panel shows all the available functions . Using these functions, it is possible to change some of the parameters and add some functions. Changing the DTS setting can vary the functions of the unit so that it does not respond to the DMX 512 used to control it. Carefully follow the instructions below before carrying out any variations or selections.

DELTA SOFTWARE RELEASE 1.72

1)GLOBAL SETTING MENU

LANGUAGE
DEFAULT PAGE
SECURITY
DEFAULT SETTING
SET DATE
SET TIME
UPDATE
DOWNLOAD
ABOUT

2)MODE SETTING MENU

MODE DMX
MODE RECORDER
MODE MASTER
MODE SLAVE
MODE IR
MODE MANUAL
MODE TWILIGHT

3)MOVING HEAD SETUP MENU

PAN MIN
PAN MAX
TILT MIN
TILT MAX
CALIBRATE PAN
CALIBRATE TILT
INVERT PAN
INVERT TILT
SWAP PAN & TILT
ENCODER
RESET PAN & TILT
SPEED PAN & TILT

4)LED SETUP MENU

COLOUR MODE
WHITE BALANCE
BOOST DRIVING
MIN RGB
MAX RGB
SMOOT FILTER
PWM FREQUENCY

5)DIPLAY SETTINGS MENU

CONTRAST
FLIP DISPLAY
SCREEN SAVER

6)MEASURE MENU

LIFE
DMX
VOLTAGE
TEMPERATURA
TWILIGHT

1)GLOBAL SETTING MENU

LANGUAGE
DEFAULT PAGE
SECURITY
DEFAULT SETTING
SET DATE
SET TIME
UPDATE
DOWNLOAD
ABOUT

Global Settings

A001	👉 Menu 👉 Up-Down	**GLOBAL SETTING**		👉 ENTER
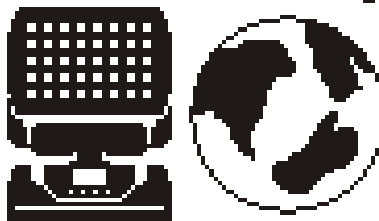
👉 Up-Down **Language**	👉 ENTER 👉 Up-Down 👉 Up-Down	Set Language English	English = Default	👉 ENTER

LANGUAGE SELECTION
This menu allow to set the

👉 Up-Down **Default Page**	👉 ENTER 👉 Up-Down 👉 Up-Down	Set Default Page Four Digit A001 Status	Four Digit = DMX address visualisation Status = DMX / Color Mode / Boost Power / Security	👉 ENTER 👉 ENTER

DEFAULT PAGE SELECTION
This menu allow to set the visualisation for the start up page

---

👉 Up-Down **Security**	👉 ENTER 👉 Up-Down 👉 Up-Down	Security Unlocked Enter Security Code 0 0 0 0 Confirm Security Code 0 0 0 0	Default 0000 = no password Universal Unlock code = 2903	👉 ENTER

SECURITY PASSWORD
This menu allow to select a security password to lock the user's settings

---

👉 Up-Down **Default Setting**	👉 ENTER 👉 Up-Down 👉 Up-Down	Restore Main Settings ENTER to CONFIRM & Reboot	GAME,TIMER and WHITE SETTING will not be changed	👉 ENTER 👉 ENTER

DEFAULT SETTINGS
This menu allow to set the unit to the company settings

👉 Up-Down **Set Date**	👉 ENTER 👉 Up-Down	Set Date Year 2007 Month Jan Day of the month 01 Day of the week Mon	Date settings for Stand Alone mode	👉 ENTER

DATE SETTING
This menu allow to set the day of the week the month and the year

☞ Up-Down   Set Time   ☞ ENTER   ☞ Up-Down

```
┌─────────────────────┐
│     Set Time        │
│ Hour      03        │
│                     │
│ Minute    01        │
│                     │
│                     │
│                     │
└─────────────────────┘
```

Real time internal clock setting   ☞ ENTER

TIME SETTING
This menu allow to set the unit's on board clock for STAND ALONE MODE

☞ Up-Down   Update   ☞ ENTER   ☞ Up-Down

```
┌─────────────────────┐
│  Select UPDATE Mode │
│ Direct to PC        │
│                     │
│                     │
│                     │
│  ENTER to CONFIRM   │
└─────────────────────┘
```

Update the unit's software from PC by cable   ☞ ENTER

UPDATE MENU
This menu allow to upgrade the uni's software by computer or remote control

---

☞ Up-Down   Download   ☞ ENTER   ☞ Up-Down

```
┌─────────────────────┐
│ Select DOWNLOAD Mode│
│ Direct to PC        │
│                     │
│                     │
│                     │
│  ENTER to CONFIRM   │
└─────────────────────┘
```

Download the unit's program to PC by cable   ☞ ENTER

DOWNLOAD MENU
This menu allow to save unit's programs into computer

☞ Up-Down   ABOUT   ☞ ENTER   ☞ Up-Down

```
┌─────────────────────┐
│    About DELTA R     │
│ Master PCB   0514L019│
│ Loader Version   1.02│
│ HW Version       1.01│
│ SW Version       1.61│
│ Pan&Tilt PCB 0514S100│
│ PAn&Tilt Version 2.05│
└─────────────────────┘
```

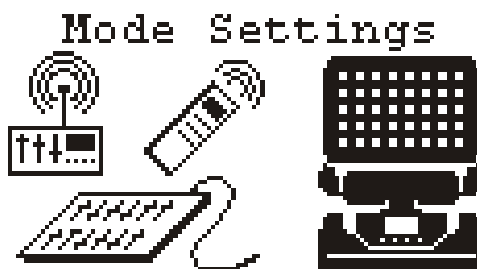Unit's Hardware and software infos   ☞ ENTER

ABOUT MENU
This menu show informations about unit's hardware and software

2)MODE SETTING MENU

MODE DMX
MODE RECORDER
MODE MASTER
MODE SLAVE
MODE IR
MODE MANUAL
MODE TWILIGHT

```
Mode Settings
```

A001   ☞ ☞   **MODE SETTINGS**   ☞
        Menu Up-Down   ENTER

☞ Mode DMX   ☞   ☞
Up-Down   ENTER Up-Down

| Set Address DMX | Address range 001-489 | ☞ ENTER |

DMX ADDRESS SELECTION
This menu allow to set the unit's
DMX address.

001

☞ Mode Recorder   ☞   ☞
Up-Down   ENTER Up-Down

RECORDER MODE SETTING
This menu let you create 2 different chases,CPR1
and CPR2 (16 steps each) that will then run in
Master Mode.
Two different recording mode are available:
1)Manual Recording Mode
2)DMX Recording Mode

1)Manual Recording Mode

```
RECORDER Mode

Input Mode        MANUAL

Select Chase      CPR1
```

In Manual Recording Mode,it is
possible to create and store the
steps of the chase by using the unit
display panel and buttons.

Three different options are available:
1)EDIT = Let you modify and store
new values for all the channels on
the selected Step.
2)WIEV MEM = Let you see the
existing programmed steps of the
chase
3)SET LAST = Let you set the last
step to be ran on the chase.

☞ ENTER

```
RECORDER MANUAL
CPR1  STEP 01 EDIT
PAN       016     TILT 255
SHUTTER 009  DIMM 017
 R 016     G 016     B 000
 WHITE  012   CTC   000
MACRO  000
```

----

2)DMX Recorder Mode
To program CPR1 and CPR2 by using a DMX controller,
3 more DMX channels are needed in addition to the 15
channels necessary to control the unit.
So that in RECORDER mode (via DMX) the unit will
need 18 channels to be correctly programmed.
The 3 new DMX channels are:
DMX channel 16 = STEPS channel
From 0 - 15 = VIEW DMX, the unit shows the values
received from the DMX controller in that moment.
From 16 – 255, the previously programmed steps (16
steps from 01 to 16) are displayed.
 DMX channel 17 = VIEW / EDIT / SET LAST channel
If channel 16 (STEPS channel) is set to value 0 - 15,
the DMX channel 17 has no functions.
If channel 16 (STEPS channel) is set to value 16 - 255,
the DMX channel 17 has the following functions:
From 0 - 19 = VIEW MEM, the unit shows the
previously programmed steps.
From 20 - 234 = EDIT, the unit runs the configuration
given by the DMX controller in that moment.

```
RECORDER Mode

Input Mode          DMX

Select Chase        CPR1

Warning 18 channels !
```

In DMX Recording Mode,it is
possible to create and store the
steps of the chases by using an
external DMX controller.

WARNING !
To program CPR1 and CPR2 by using
a DMX controller, 3 more DMX
channels are needed in addition to
the 15 channels necessary to control
the unit.

☞ ENTER

```
RECORDER DMX
CPR1  STEP 01 EDIT
PAN       016     TILT 255
SHUTTER 009  DIMM 017
 R 016     G 016     B 000
 WHITE  012   CTC   000
MACRO  000
```

With the STEPS channel it is possible to select the step to create, while with REC channel it is possible to store the configuration on the selected step.-
From 234 - 255 = SET LAST, the unit runs the configuration given by the DMX controller in that moment closing the Program as last step.
With the REC channel it is possible to record the selected step as last step to be ran on the Program.
 DMX channel 18 = REC channel
REC channel saves the configuration given by the DMX controller in the selected step: you change the DMX value from 0 to 255 (the display shows
"WRITING" indicating that the step has been recorded). We suggest to keep the REC channel set to 0 and to run through the 255 only once you have
decided to save the new configuration. If CPR1 or CPR2 are not closed, by indicating the last step (Edit channel between 235-255), all 16 steps will be
played through in playback mode, even if not programmed.

☞ Up-Down   Mode Master

☞ ENTER ☞ Up-Down

```
┌──────────────────────────┐
│     Set MASTER MODE      │
│                          │
│  Mode :         MASTER   │
│  Actual :       DMX      │
│                          │
│                          │
│    ENTER to CONFIRM      │
└──────────────────────────┘
```

The Delta setted as MASTER, send DMX signal to all the other units connected to the same DMX line   ☞ ENTER

MASTER MODE SETTING
This menu allow to set Delta R as master unit (No DMX signal must be present on unit's DMX input panel) .
The unit will ran in automatic mode without needing of an external controller.
Different chases are selectable by user

CPR1/CPR2/CPR1&2
Chases with 16 steps previously created in RECORDER mode.
Time and Wait time selectable by user

CRNB
Rainbow colours effect.
Time and Pan&Tilt selectable by user

CUE 1-9
Color Macros with fixed colors
Pan&Tilt selectable by user

☞ Up-Down

```
┌──────────────────────────┐
│       Master Mode        │
│                          │
│  Set CHASE        CPR1   │
│  Set TIME     Sec 0025   │
│  Set  WAIT    Sec 0015   │
│                          │
│                          │
└──────────────────────────┘
```

By setting all the units connected to the MASTER, to DMX address 1, them will be sinchronized with the Master unit following the chase selected on it, including TIME, WAIT and Pan&Tilt position of the MASTER unit.   ☞ ENTER

By setting all the units connected to the MASTER, as SLAVE unit (see SLAVE mode), them will be sinchronized with the Master unit only for TIME and WAIT time, but running their own chase CPR1/CPR2 with dedidicated Pan&Tilt position, colors and effects.

☞ Up-Down   Mode Slave

☞ ENTER ☞ Up-Down

```
┌──────────────────────────┐
│      Set SLAVE MODE      │
│                          │
│  Mode :         SLAVE    │
│  Actual :       DMX      │
│                          │
│                          │
│    ENTER to CONFIRM      │
└──────────────────────────┘
```

The SLAVE unit receive DMX signal from the MASTER unit   ☞ ENTER

 SLAVE MODE SETTING
This menu allow to set the Delta R as slave unit.
DMX signal must be present from MASTER unit in order to ran in SLAVE mode.

By setting all the units connected to the MASTER, as SLAVE unit, them will be sinchronized with the Master unit only for TIME and WAIT time, but running their own chase CPR1/CPR2 with dedidicated Pan&Tilt position, colors and effects.

☞ Mode IR   ☞ ☞
Up-Down   ENTER Up-Down

IR MODE SETTING
By activating IR mode on Delta unit
it will be possible to navigate
trought the unit functions by using
the D.T.S. infrared remote control
(D.T.S. Code :0514L008).

```
Set IR MODE

Mode :        IR
Actual :      DMX


  ENTER to CONFIRM
```

The unit is controlled by the infrared   ☞
remote control   ENTER

INFRARED REMOTE CONTROL

By activating IR mode on Delta unit it will be possible to navigate
trought the unit functions by using the D.T.S. infrared remote
control (D.T.S. Code :0514L008).

Infrared remote control functions:
ON/OFF and MUTE buttons
In Master/Slave mode let you stop the games running.
Master and slave units will go in Stand-by mode
1-9 buttons
Let you select the chase to run (CPR1/CPR2/CRNB/CUE 1-6)
1-/.. Button
Let you select the chase to run (CUE 7-9)
VOL +/-
No function
PROG +/-
Let you scroll between the selectable chases
RED/GREEN/YELLOW/BLUE buttons
Direct acces to cues for Red/Green/Blue/Yellow colour.
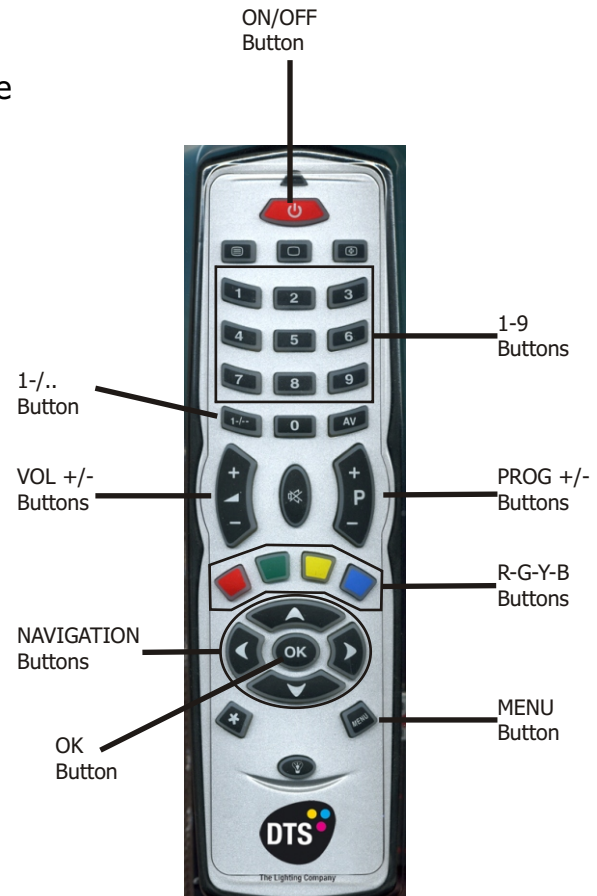Red=CUE1 / Green=CUE3 / Yellow=CUE2 / Blue=CUE5
Navigation buttons
Same as UP/DOWN on unit display
OK button
Same as ENTER on unit display
MENU button
Same as MENU on unit display

ON/OFF
Button

1-9
Buttons

1-/..
Button

VOL +/-
Buttons

PROG +/-
Buttons

R-G-Y-B
Buttons

NAVIGATION
Buttons

OK
Button

MENU
Button

☞ Mode Manual   ☞ ☞
Up-Down   ENTER Up-Down

MANUAL MODE SETTING
This menu let you control Delta unit in manual
mode by using the unit display.
In MANUAL mode, no external controller is
needed.

```
Set MANUAL MODE

Mode :        MANUAL
Actual :      DMX


  ENTER to CONFIRM
```

```
MAN Mode Enter VALUES

Channel       Value
PAN H          128
```

In MANUAL mode it is possible to   ☞
adjust all the unit functions by using   ENTER
UP/DOWN and ENTER buttons:

PAN H
PAN L
TILT H
TILT L
SPEED PAN&TILT
SHUTTER
DIMMER
RED
GREEN
BLUE
WHITE
CTC
MACRO
FUNCTION
RESET

☞ TWILIGHT MODE ☞ ☞
Up-Down   ENTER Up-Down

TWILIGHT MODE MENU
This menu allow to set the unit in Twilight mode.
Twilight mode let you turn ON and OFF the unit at a specific clock time (including day of the week) and/or at a specific twilight level.
The Twilight mode make use of a twilight sensor located on the front panel near unit display.
To know the twilight ambient level value measured from the sensor, scroll the unit menu till MEASURE Mode and select Twilight.

```
  Set TWILIGHT MODE

Mode :          TWILIGHT
Actual :        DMX


  ENTER to CONFIRM
```

```
   TWILIGHT Mode
ACTION          CPR1
LEVEL ON 100   OFF 150:
TIME CONDIT  INCLUSIVE
DAY Mon      START 22:00
TIME ON           10:00
```

The unit is switched on and off at the desired twilight level or/and at a specific clock time.

☞
ENTER

ACTION :
Let you select the desired function in twilight mode.
You can choose between: DMX / CPR1 / CPR2 / CPR1&2 / CRNB / CUE 1-9 /

LEVEL ON and OFF :
Let you select the desired twilight levels for:
 Twilight mode ON and OFF.

TIME CONDITION:
Four different options are available:
1) INACTIVE
Clock time (START) and Time on period (TIME ON), are inactive.
In this condition the unit goes ON only if the twilight level is valid
2)COMBINED
Clock time (START), Time on period (TIME ON) and Twilight level are active.
In this condition, the unit goes ON only if all the parameters are valid.
3)INCLUSIVE
Clock time (START), Time on period (TIME ON) and Twilight level are active.
In this condition, the unit goes ON also if only one of the paramete is valid.
4)EXCLUSIVE
Clock time (START) and Time on period (TIME ON), are active, while Twilight level is inactive.
In this condition, the unit goes ON only if Clock time (START) is valid.

3)MOVING HEAD SETUP MENU

Moving Head Setup

PAN MIN
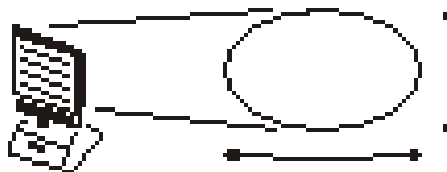PAN MAX
TILT MIN
TILT MAX
CALIBRATE PAN
CALIBRATE TILT
INVERT PAN
INVERT TILT
SWAP PAN & TILT
ENCODER
RESET PAN & TILT
SPEED PAN & TILT

A001   ☞   ☞   **MOVING HEAD SETUP**
        Menu Up-Down

☞
ENTER

A001   ☞ Menu   ☞ Up-Down   **MOVING HEAD SETUP**   ☞ ENTER

☞ Up-Down   **Pan Min**   ☞ ENTER   ☞ Up-Down

PAN MINIMUM POSITION
This menu allow to set the Pan minimum position (Default =000)

```
Setting Pan Min

Pan Min : 000
```

Range 000-255
Default = 000

☞ ENTER

☞ Up-Down   **Pan Max**   ☞ ENTER   ☞ Up-Down

PAN MAXIMUM POSITION
This menu allow to set Pan maximum position (Default = 255)

```
Setting Pan Max

Pan Man : 000
```

Range 255-000
Default = 255

☞ ENTER

☞ Up-Down   **Tilt Min**   ☞ ENTER   ☞ Up-Down

TILT MINIMUM POSITION
This menu allow to set the Tilt minimum position in degrees (Default =000)

```
Setting Tilt Min

Tilt Min : 000
```

Range 000-255
Default = 000

☞ ENTER

☞ Up-Down   **Tilt Max**   ☞ ENTER   ☞ Up-Down

TILT MAXIMUM POSITION
This menu allow to set the Tilt maximum position (Default = 255)

```
Setting Tilt Max

Tilt Max : 000
```

Range 255-000
Default = 255

☞ ENTER

☞ Up-Down   **Calibrate Pan**   ☞ ENTER   ☞ Up-Down

PAN CALIBRATION
This menu allow to calibrate Pan home position (Default = 105)

```
Calibrating Pan

Pan :      105
```

Range 000-255

☞ ENTER

☞ Up-Down   **Calibrate Tilt**   ☞ ENTER   ☞ Up-Down

TILT CALIBRATION
This menu allow to calibrate Tilt home position (Default = 128)

```
Calibrating Tilt

Tilt :      105
```

Range 000-255

☞ ENTER

👉 Up-Down **Invert Pan**

👉 ENTER 👉 Up-Down

```
    Set PAN INVERTION

  Pan :      Normal

  Actual     Normal
```

Pan movement Normal or Inverted
Default = Normal

👉 ENTER

PAN INVERTION
This menu allow to set the Pan movement.
Normal or Inverted

👉 Up-Down **Invert Tilt**

👉 ENTER 👉 Up-Down

```
    Set TILT INVERTION

  Tilt :      Normal

  Actual     Normal
```

Tilt movement Normal or Inverted
Default = Normal

👉 ENTER

TILT INVERTION
This menu allow to set the Tilt movement.
Normal or Inverted

👉 Up-Down **Swap Pan&Tilt**

👉 ENTER 👉 Up-Down

```
  Set Pan/Tilt SWAPPING

  Swap :      Normal

  Actual      Normal
```

Pan control inverted with Tilt control and vice versa
Dfault = Normal

👉 ENTER

PAN&TILT SWAP
This menu allow to invert the control of Pan with the control of Tilt.

IMPORTANT: (During PAN/TILT MIN,PAN/TILT MAX and PAN/TILT CALIBRATE setting,PAN/TILT INVERT and PAN/TILT SWAP are disabled

---

👉 Up-Down **Encoder**

👉 ENTER 👉 Up-Down

```
  Set Encoder Status

  Encoder :  Active

   Actual     Active
```

Pan/Tilt auto-repositioning system enabled or disabled
Default = Active

👉 ENTER

ENCODER SETTING
This menu allow to enable/disable the auto-repositioning function for Pan and Tilt

---

👉 Up-Down **Reset Pan & Tilt**

👉 ENTER

```
   Resetting Pan & Tilt

     PRESS ENTER
  To RESET Pan & Tilt
```

Pan &Tilt motors reset

👉 ENTER

PAN&TILT RESET
This menu allow to reset Pan and Tilt Motors

👉 Up-Down **Speed Pan & Tilt**

👉 ENTER 👉 Up-Down

```
   Set SPEED MAX P&T

   Speed MAX % 100
```

Pan&Tilt maximum motor speed
Selectable between 25-100%

👉 ENTER

PAN & TILT MAXIMUM SPEED
This menu allow to set the maximum speed for Pan & Tilt movement.

4)LED SETUP MENU

LED Setup

COLOUR MODE
WHITE BALANCE
BOOST DRIVING
MIN RGB
MAX RGB
SMOOT FILTER
PWM FREQUENCY

A001   Menu   Up-Down   **LED SETUP**   ENTER

Up-Down   Colour Mode   ENTER   Up-Down
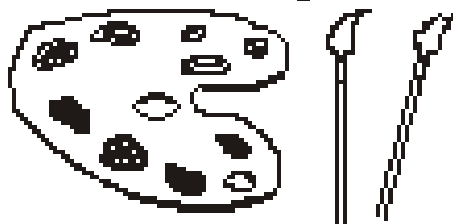
COLOUR MODE
This menu allow to select the LED'S colour mode control system between RGB, CMYK or HSV

Set Colour Mode
RGB
CMYK
HSV
Actual   RGB

RGB Mode (Default)
Ch7 = Dimmer / Ch8 = Red   Ch9= Green / Ch10= BLue

CMYK Mode
Ch7 = Black / Ch8 = Cyan
Ch9= Magenta / Ch10= Yellow

HSV Mode
Ch7 = Nu / Ch8 = Hue
Ch9= Saturation / Ch10= Value

ENTER

Up-Down   White balance   ENTER   Up-Down

WHITE BALANCE
This menu allow to select the levels for Red,Green and blue obtaining a custom White

Setting WHITE	
RED	255
GREEN	255
BLUE	255

The Custom White can be Recall by setting DMX channel 11 (WHITE) in the range 172-213

ENTER

Up-Down   Boost Driving   ENTER   Up-Down

BOOST DRIVING
This menu allow to increase the LED's current from 350mA to 500 mA

Setting LED BOOST
BOOST Status
Active
Warning TEMPERATURE
PROTECTION ACTIVATED

Whit BOOST active,the LED's current is setted to 500mA (30%more gain).
Default = Disable
NTC thermal protection active.

ENTER

Up-Down   Min RGB   ENTER   Up-Down

RGB MINIMUM VALUES
This menu allow to select the minimum levels for Red,Green and blue

Setting RGB Min		
Min RED	:	000
Min GREEN	:	000
Min BLUE	:	000

These settings have priority on Master Dimmer (DMX channel 7)

ENTER

Up-Down   Max RGB   ENTER   Up-Down

RGB MAXIMUM VALUES
This menu allow to select the maximum levels for Red,Green and blue

Setting RGB Max		
Max RED	:	000
Max GREEN	:	000
Max BLUE	:	000

These settings have priority on Master Dimmer (DMX channel 7)

ENTER

👉 Up-Down   Smooth Filter   👉 ENTER   👉 Up-Down

SMOOTH FILTER VALUE
This menu allow to select the value of the delay(in millisecons) for RGB channels reaction to DMX or Program variation.
001=2.5 ms delay (Fast response)
100=250 ms delay (Slow response)

```
  Set Smooth Filter

 Filter Value:    010


  ENTER to CONFIRM
```

Range = 001 / 100
Default = 10
001 = 2.5mS (Istant response to DMX variation)
100 = 250mS (Smooth response to DMX variation)

👉 ENTER

👉 Up-Down   PWM frequency   👉 ENTER   👉 Up-Down

PWM FREQUENCY VALUE
This menu allow to adjust the PWM frequency value (Hz) in order to reduce flickering in the process of your camera recordings

```
  Set PWM Frequency
 427 Hz
1000 Hz
2000 Hz
4000 Hz
6000 Hz
Actual      427 Hz
```

5 different PWM frequencies available.
Default = 427 Hz

👉 ENTER

---

5)DIPLAY SETUP MENU

CONTRAST
FLIP DISPLAY
SCREEN SAVER

Display Settings

A001   👉 Menu   👉 Up-Down   **DISPLAY SETUP MENU**   👉 ENTER

👉 Up-Down   Contrast   👉 ENTER   👉 Up-Down

DISPLAY CONTRAST
This menu allow to select display's contrast level.

```
    Contrast 7



0 1 2 3 4 5 6 7 8 9
```

Range = 0-9

👉 ENTER

👉 Up-Down   Flip Display   👉 ENTER   👉 Up-Down

DISPLAY FLIP
This menu allow to reverse display's reading depending on the mounting position
(On the ground or suspended).

```
   Flip Select
   A
```

Default = On the ground

👉 ENTER

👉 Up-Down   Screen saver   👉 ENTER   👉 Up-Down

SCREEN SAVER
This menu allow to activate the screen saver.

```
SCREEN SAVER SETTING

Screen Type      None

Screen Time (sec):005
```

Screen saver selectable between None (default) and Blank.
Screen saver activating time selectable between 005 / 180 seconds

👉 ENTER

6)MEASURE MENU

LIFE
DMX
VOLTAGE
TEMPERATURE
TWILIGHT

Measure

A001	☞ ☞	**MEASURE MENU**	☞
	Menu Up-Down		ENTER

☞ Life
Up-Down

☞ ☞
ENTER Up-Down
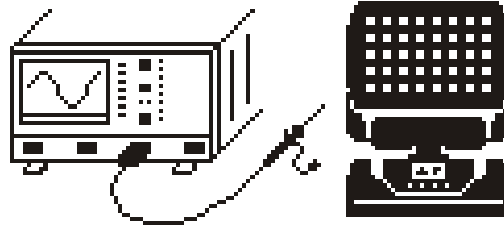
LIFE TIME
This menu show the total UNIT LIFE TIME (reset not possible) and the RGB life TIME (reset possible)

```
Measure Life

 Delta R Total LIFE


Days  Hours  Min  Sec
  1    19    47   55
UP/DW Change Measure
```

Total Unit Life Time
Reset not possible

☞
ENTER

```
Measure Life

 Delta R RED LIFE


Days  Hours  Min  Sec
  0    5     22   30
UP/DW Change Measure
```

To resed Red life time,keep pushed Enter button for more than 5 seconds

☞
ENTER

```
Measure Life

 Delta R GREEN LIFE


Days  Hours  Min  Sec
  0    4     37   15
UP/DW Change Measure
```

To resed Green life time,keep pushed Enter button for more than 5 seconds

☞
ENTER

```
Measure Life

 Delta R BLUE LIFE


Days  Hours  Min  Sec
  0    4     06   53
UP/DW Change Measure
```

To resed Blue life time,keep pushed Enter button for more than 5 seconds

☞
ENTER

👉 Dmx 　　👉 👉 　　| Measure DMX |
Up-Down 　　ENTER Up-Down

DMX
This menu show the DMX channel levels

```
   Measure DMX
Start Channels Values
001  000 000 000 000
005  000 000 000 000
009  000 000 000 000
013  000 000 000 000
```

DMX channel levels as received from DMX line 　👉 ENTER

👉 Voltage 　　👉 👉
Up-Down 　　ENTER Up-Down

VOLTAGE
This menu show the different Voltage levels for every electronic circuit inside the unit

```
   Measure VOLTAGE

V Motor           36,9
V Power          160,5
V Internal        17,6
V Oled            13,2
```

All the values are espressed in Volt 　👉 ENTER

👉 Temperature 　　👉 👉
Up-Down 　　ENTER Up-Down

TEMPERATURE
This menu show the NTC sensor temperature.

```
Measure TEMPERATURE

Celsius    20,5
▷█████        ◁
```

LED's temperature monitor 　👉 ENTER

👉 Twilight 　　👉 👉
Up-Down 　　ENTER Up-Down

TWILIGHT
This menu show the twilight level.

```
Measure TWILIGHT

Value :    0314


▷████████     ◁
```

Light sensor Twilight level
(Located on the front panel of the unit) 　👉 ENTER

9- OPENING UP THE PROJECTOR HOUSING:

It is possible to inspect the inside of the projector by removing the covers as shown below.

Attention: REMOVE MAINS POWER PRIOR TO ACCESSING THE PROJECTOR'S INTERNAL COMPONENTS.

Proceed as per the pictures below

9.1- Arms

Remove these two screws on both arm sides

9.2- Base

Remove the 12 screws located on the base

10- CHANGHING THE LENSES

Delta R Full Color

Optical Lenses set can be interchanged by users.
Three different models are available: (spot / medium /wide)
Lenses set spot (cod. 03.LK.008)
Lenses set medium (cod. 03.LK.001)
Lenses set wide (cod. 03.LK.002)

To change the lenses set, proceed as per the pictures below

Remove these 12 screws on both sides of the rear head assembly

Remove the top head cover

Remove these 8 screws and change the panel

ATTENTION:
Never touch LEDs and Lensens with hands

10- CHANGHING THE LENSES

Delta R Triled

Optical Lenses set can be interchanged by users.
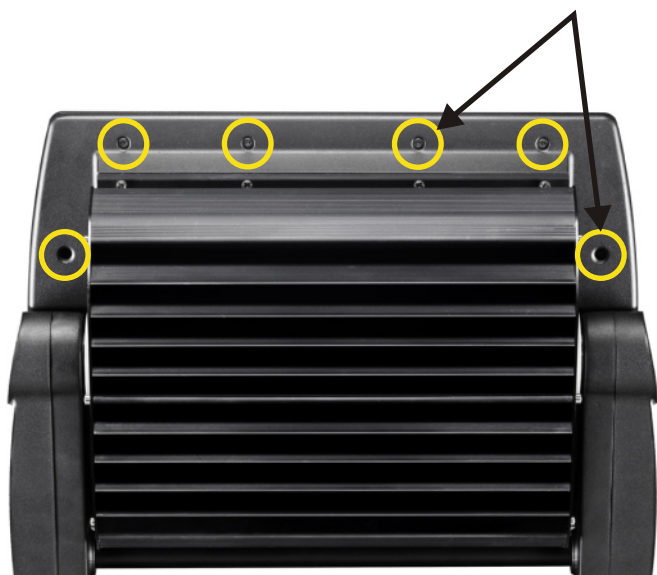Three different models are available: (spot / medium /wide)
Lenses set spot (cod. 03.LK.008)
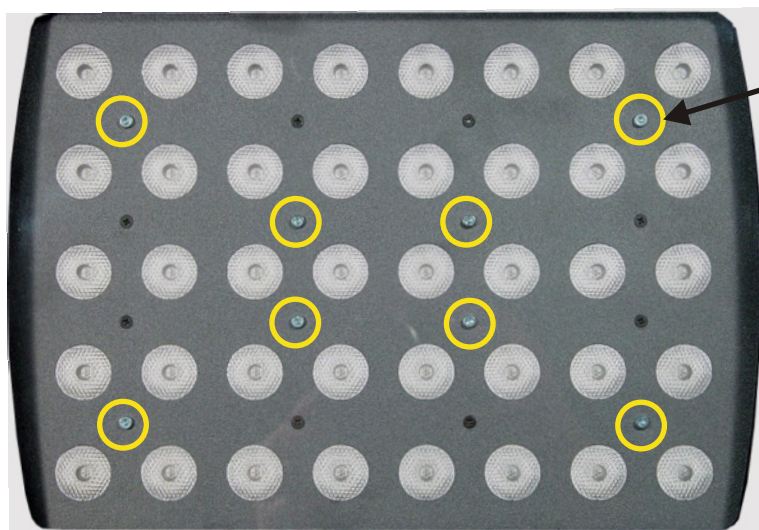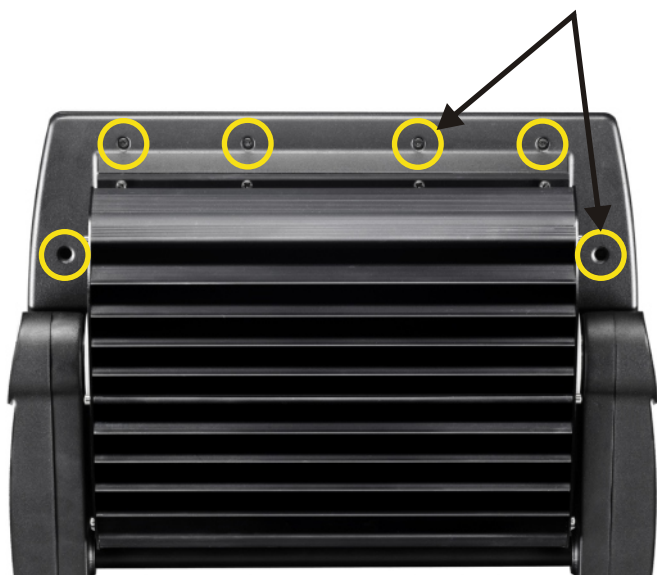Lenses set medium (cod. 03.LK.001)
Lenses set wide (cod. 03.LK.002)

To change the lenses set, proceed as per the pictures below

Remove these 12 screws on both sides of the rear head assembly

Remove the top head cover

Remove these 6 screws and change the panel
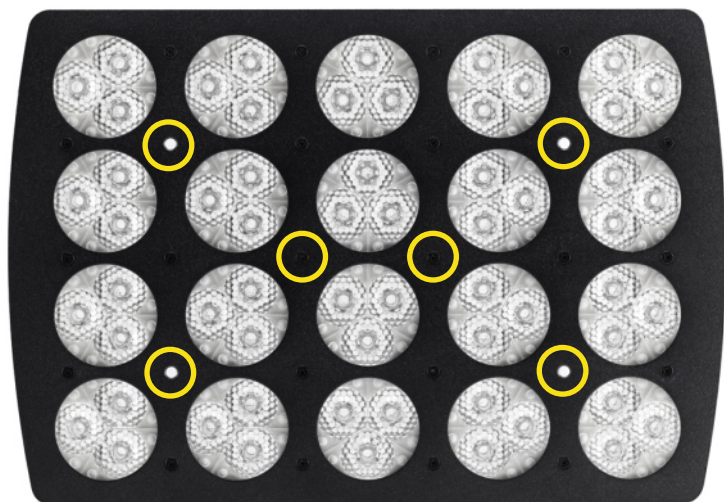
**ATTENTION:
Never touch LEDs and Lensens with hands**

11- PERIODIC CLEANING:

Front lenses Glass

The dust can reduce the luminous output substantially. Regularly clean the front lenses glass using a soft cotton cloth, dampened with a specialist glasses cleaning solution.

12- PERIODIC CONTROLS:

Mechanical parts:
Periodically check all mechanical parts and the gaskets, replacing them if necessary.

Electrical components:
Check all electrical components for correct earthing and proper attachment of all connectors, refastening if necessary.

Fuse replacement:
Locate the fuse, which protect the electronics, in the base of the DELTA R.
Using a multimeter, test the condition of the fuse, replacing it with one of equivalent type if necessary.
Attention: Disconnect mains power prior to removing the projector housing.

13- DMX PROTOCOL

15 CHANNELS MODE

1	PAN msb 320°
2	PAN lsb
3	TILT msb 180°
4	TILT lsb
5	SPEED MOVEMENT
6	SHUTTER
7	DIMMER
8	RED
9	GREEN
10	BLUE
11	WHITE (Preprogrammed white at different color temperature)
12	CTC
13	COLOURS MACRO
14	FUNCTIONS
15	RESET

DMX CHANNEL	1	Parameter: **PAN msb**

DMX CHANNEL	2	Parameter: **PAN lsb**

DMX CHANNEL	3	Parameter: **TILT msb**

DMX CHANNEL	4	Parameter: **TILT lsb**

DMX CHANNEL	5	Parameter: **MOVEMENT SPEED**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-10	5				**Standard**
11-255					**Vector mode from fast to slow**

DMX CHANNEL	6	Parameter: **SHUTTER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9	5				**Black-out**
10-19	14				**Open**
20-29	24				**Black-out**
30-119					**Strobe at variable speed(from slow to fast)**
120-149					**Pulse open at variable speed(from slow to fast)**
150-179					**Pulse close at variable speed(from slow to fast)**
180-204	192				**Random Strobe (Master and RGB active)**
205-229	218				**Random Strobe (Full)**
230-244	238				**PAn&Tilt movement in Black-out**
245-255	250				**Open**

DELTA R

DMX CHANNEL	7	Parameter: **DIMMER** <u>NOTE: IN CMYK MODE Ch7 = BLACK</u>

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional dimmer**

DMX CHANNEL	8	Parameter: **RED** <u>NOTE: IN CMYK MODE Ch8 = CYAN</u> <u>IN HSV MODE Ch8 = HUE</u>

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	9	Parameter: **GREEN** <u>NOTE: IN CMYK MODE Ch9 = MAGENTA</u> <u>IN HSV MODE Ch9 = SATURATION</u>

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	10	Parameter: **BLUE** <u>NOTE: IN CMYK MODE Ch10 = YELLOW</u> <u>IN HSV MODE Ch10 = VALUE</u>

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	11	Parameter: **WHITE** (Pre-programmed White at diff. color temperature)

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-43	**21**				**No Function**
44-85	**66**				**Full (Red-Green-Blue at Full)**
86-127	**105**				**White DTS**

IF CHANNEL 14 (FUNCTIONS) = CUSTOM WHITE RECALL (Dmx range value 0 - 79)

128-171	**150**				**Custom White Recall**
172-213	**192**	**White Balance(White Balance programmed on Unit's Menu)**			
214-255	**234**	**White CTC (Channel 12 CTC enabled** **Linear color temp. Correction: 3000K-7000K)**			

IF CHANNEL 14 (FUNCTIONS) = CUSTOM WHITE CREATE (Dmx range value 80 - 160)

128-171	**150**	**Custom White Create (RGB levels selectable by DMX)**			
172-213	**192**	**White Balance(White Balance programmed on Unit's Menu)**			
214-255	**234**	**White CTC (Channel 12 CTC enabled** **Linear color temp. Correction: 3000K-7000K)**			

DMX CHANNEL	12	Parameter: **CTC** **(Color temperature correction)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function

IF CHANNEL 11 (White) = WHITE CTC (Dmx range value 214 - 255)

0-255	Linear color temp. Correction: 0 = 3000K / 128 = 5500K / 255 = 7000K

IF CHANNEL 11 (White) = NO FUNCTION (Dmx range value 0 - 43)

0-255	Smooth RGB linear Hue correction

DMX CHANNEL	13	Parameter: **COLOUR MACROS**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					**No Function**
15-29					**Macro 1**
30-44					**Macro 2**
45-59					**Macro 3**
60-74					**Macro 4**
75-89					**Macro 5**
90-104					**Macro 6**
105-119					**Macro 7**
120-134					**Macro 8**
135-149					**Macro 9**
150-164					**Macro 10**
165-179					**Macro 11**
180-194					**Macro 12**
195-209					**Macro 13**
210-225					**Macro 14**
226-239					**Macro 15**
240-255					**Macro 16**

DMX CHANNEL	14	Parameter: **FUNCTIONS (Recall,Create and Store the Custom white)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79		Custom White Recall (Enable CH 11 for Custom white Recall)			
80-160		Custom White Create (Enable CH 11 for Custom white Creation)			
161-255		Custom White Store (Store the Custom White created)			

DMX CHANNEL	15	Parameter: **RESET (Pan&Tilt Reset)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-15	8				**No Functions**
16-255	120				**Pan&Tilt Reset**

MADE IN ITALY $\quad$ CE

DTS

The Lighting Company

ISO 9001:2000

D.T.S. quality system
is certified to the
ISO 9001:2000 standard

D.T.S. products are designed
and manufactured at the D.T.S.
plants in Italy

0517I069

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